Reproductive Health

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* Introduction

- Reproductive health is not merely healthy reproductive organs and proper working of reproductive system.
- Reprodiictive health has broader aspects in other terms also like emotionally and socially.
- A/c to WHO, A person should be healthy in all aspects including reproductive health e.g. physically, Emotionally, Behaviourally & socially
- India was among the first countries that initiate program aiming 'Reproductive Health' as social goal
- Family program was initiated in 1951, later this program was renamed as RCH (Reproductive and child health care)
- Aim of RCH program was to create awareness among people about reproductive health and reproduction
- Various other topics were also aimed like:- Adolescence, Reproductive organ, Reproduction, Menstruation, pregnency and care of mother, post natal care of child

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. Hygiene during menstruation, sexually transmitted disease and gender equality.

• Through audio-visual, print media governmental and non-governmental agencies, awareness was spread among people

• Under RCH, following facilities were also provided
  (i) Infrastructural support
  (ii) Material support
  (iii) Medical expertise

• Sex education in school is promoted

• Role of teacher, parent, close relative and friends to create awareness about reproduction and related topics at individual level.

Amniocentesis

• Done b/w 16th – 20th week of pregnancy

• In this technique amniotic fluid is taken which contain fetal cells and dissolved substance

• These fetal cells are analysed and Karyotyping is done
  ↳ study of chromosomal pattern

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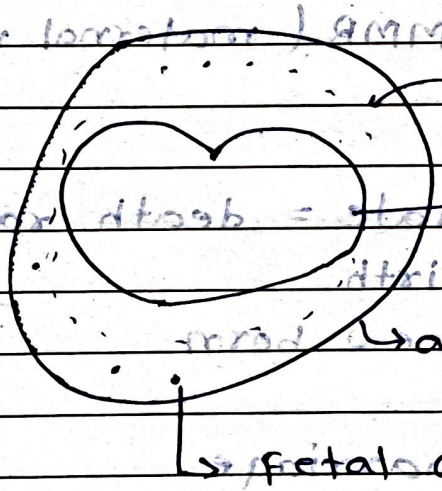
- Main aim of amniocentesis is to detect genetic disorders of fetal
  - down's syndrome (21st chromosome abnormal)
  - sickle cell anemia (11th chromosome abnormal)
  - Haemophilia/color blindness
  - Klinefelter's syndrome
- Amniocentesis was misused for sex determination which cause increase in female foeticide.
- Amniocentesis was legally ban



* population explosion

- Rapid unlimited population growth.
- Result in scarcity of food, water, employment also cause increase in crime, poverty etc.
- population growth rate :- < 2% [20/1000/year] (a/c to 2011 census report)

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year	World population	India population
1900	2 billion	350 million
2000	6 billion	1 billion
2011	7.2 billion	1.2 billion

- Reason of population explosion :-
  (i) Increase members in reproducible age
  (ii) Decrease in death rate
  (iii) Decrease in IMR (infant mortality rate)
  (iv) Decrease in MMR (maternal mortality rate)

- Term :-
  - mortality rate = death rate
  - natal → birth
  - infant → new born

- legal age of marriage
  - ↳ male = 21 years
  - ↳ female = 18 years

- SOS SLOGAN
  - ↳ Hum 2 : Humare 2
  - promoting small families

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* Contraceptive method

- Contraceptive methods are those methods which prevent pregnancy/conception.
- Characteristics of ideal contraceptive :-
  (a) user-friendly
  (b) Easily available
  (c) cheap
  (d) Reversible
  (e) effective
  (f) least or no side effect
  (g) should not interfere with sexual drive of user.

- There are many types of contraceptive available in market. Some categories are discussed below.

(a) Natural/Traditional method

→ In this method, chances of meeting of ovum and sperm is avoided

→ No chemicals, external devices are used in this hence, side effect is almost nil.

→ But chances of failure of contraception is high

→ It includes :-

(i) periodic abstinence/calender method
↳ Rhythm method

→ In this, the couple avoid coitus during 10th — 17th day of menstrual cycle
↳ fertile period

→ During this phase, chances of ovulation is high, which may result in fertilisation and pregnancy

(ii) Coitus interrupts / withdrawal method

→ During ejaculation, male withdraw his penis from vagina of female and avoid insemination

no insemination

↓

no fertilisation

↓

no pregnancy

(iii) Lactational amenorrhea

↳ ~~Lactation~~ ↳ absence of menstruation

↳ Lactation

→ During intense lactation, female do not ovulate, which further inhibit pregnancy

→ Maximum upto 6 months

→ Due to high level of prolactin, ovulation and menstruation is inhibited

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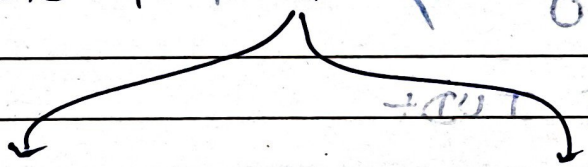
(b) **Barrier method**

→ In this method, physical meeting of sperm and ova is avoided by using a barrier

(i) **Condom**

→ Disposable
→ self - insertable (privacy to user)
→ Made of thin-rubber or latex sheath.
→ prevent transmission/spread of STD or AIDS during intercourse
→ Available for both



Male
→ cover penis of male
NIRODH : popular brand

female
→ cover cervix and vagina of reproductive tract

(ii) **Diaphragm, Vault, cervical cap**

→ Cover cervix of female reproductive tract
→ use by female only

• Spermicidal jellies, foam, cream are used alongwith barrier method which increase contraception efficiency

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. Spermicidal chemical are those chemical which kill sperm
eg. lactic acid, boric acid, zinc sulphate

(c) IUD (intra-utrine device)

→ It is inserted in the uterus of female by doctors, expert nurses through vagina.
→ It is widely accepted in India
→ Ideal contraceptive for female who wants delay pregnancy or space childrien

. Types of IUD:-

(i) Non-medicated IUD
→ Increase phagocytosis of sperm which uterus
eg. lippe's loop

(b) Copper releasing IUD
→ These IUD release Cu^{2+} (copper ions) that reduce motility and fertilising capacity of sper
→ e.g. CuT, Cu7 and multiload 375

(c) Hormonal IUD
→ Release ~~estrogen~~ and progestrone
→ make uterus unsuitable for implantation.
→ make cervix hostile to sperm
→ eg. LNG 20, progestasert

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(d) Oral contraceptive pill
↳ well accepted by female
→ Taken in the form of tablet orally so, now as pills

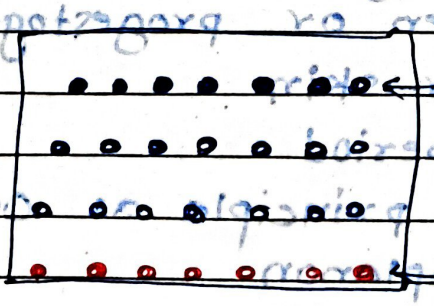
→ Oral contraceptive pill have

either progestogen alone

Combination of progestogen & estrogen
eg:- Mala D , Mala N

- These pills cause :-
  - inhibition of ovulation
  - inhibit implantation
  - alter quality of cervical mucus causing retard entry entry of sper

Q. How to take pills?
- Started within 5 days of menstrual phase
- Take regularly for 21 days
- Then gap of 7 days is there in which again Menstruation occur
- The cycle is continued till conception is prevented



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- Saheli (Developed in CDRI - lucknow)
→ non-steriodal pill / Non-hormonal pill
→ Once a week pill
→ Composition : Centchroman
→ block estrogen receptor on uterus
→ No side effect
→ estrogen can't bind to its receptor
→ No proliferation of endometrium
→ No implantation

(e) Injectable and Implants

- Injectable
→ injections having progestogen or progestogen-estrogen combination
→ Work on same principle as OCP
→ eg. Depo-provera

- Implants
→ Silicon stick having hormonal combination either progestogen or progestogen-estrogen
→ implanted under skin
→ long effective period
→ Work on same principle as OCP
→ eg. Norplant, Implanon.

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* Emergency Contraceptive

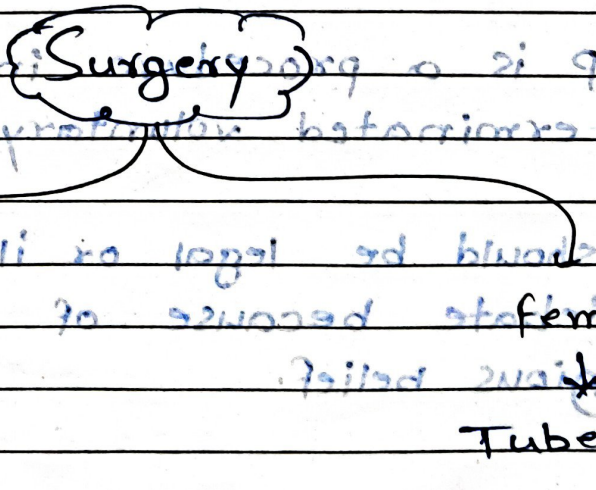
- pills having progestogen or estrogen – progestogen combination, IUDs can be used as emergency contraceptive within 72 hours of coitus

- Reason of using emergency contraceptive :
  (i) failure of contraceptive used during coitus
  (ii) In case of rape
  (iii) If couple is not mentally ready for pregency

- E.g of emergency pill : I pill, Unwanted 72

* Surgical method/termination method/sterilization

→ permanant method
→ highly effective
→ less reversibility
→ Done through surgery
→ Tranfer of gamete is blocked



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- Vasectomy
→ Cut in vas-deferens & tied seperately
→ Incision in scrotum
→ Semen contain no sperm
→ spermatogenesis continues

- Tubectomy
→ Cut in fallopian tube and tied sepretely
→ inclusion in abdomen or through vagina
→ Oogenesis continues
→ Mentrual cycle continues

* Side effects of contraceptive :-
(a) Irregular mentrual cycle
(b) Nausea/vomitting
(c) Breakthrough bleeding
(d) Breast cancer, reproductive tract cancer
(e) Abdominal pain.

* Medical Termination of pregnancy (MTP) or Induced abortion

- MTP is a procedure in which pregnancy is terminated voluntary before full term.

- It should be legal or illegal is a matter of debate because of social, ethical, religious belief.

→ It is safe during 1st trimester and riskier in 2nd trimester

→ In India, MTP was legalised in 1971, under certain condition to avoid its misuse and to decrease case of female foeticide.

Q. Why MTP?
→ When foetus is abnormal
→ When life of mother or foetus is in danger
→ In case of rape victims
→ When female is not ready mentally or physically for pregnancy

• In a year, all over world 45-50 million MTP done

↓

$\frac{1}{5}^{th}$ of this concived/ pregnancy occu

* STD (sexually transmitted disease)

• STD also called sexually transmitted infection (STI), reproductive tract infection (RTI) and ~~or~~ Veneral disease (VD)

• STD are those disease which is transmitted from one ~~pere~~ person to another through sexual contact.

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STD

Curable	uncurable
→ gonorrhea	→ AIDS
syphilis	genital herpes
genital warts etc	Hepatitis-B

- Hepatitis B and AIDS can also be transmitted through -
  (i) sharing of injection needles, surgical instrument
  (ii) Blood tranfusion
  (iii) from infected mother to foetus.

- Early detection and early treatment play vital role in treating STDs

- Early symptoms (minor) :- itching, fluid discharge, swelling, slight pain in genital region.

- Late symptoms (complicated) :- PID (~~pelit~~ pelvic inflammatory disease), abortion, still birth, ectopic pregnancy, infertility, reproductive tract cancer.

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- Ectopic pregnancy ÷ pregnancy in which implantion is done at other place than uterus.

- 15-24 years → age in which chance of STD is high

Q. How to prevent STD ?
(i) Avoid sex with unknown/multiple partners.
(ii) Always use condom in uprotected coitus
(iii) In case of dout, consult a doctor and get a complete treatment.

• Bacterial STDs	pathogen
(i) Gonorrhoea	Neisseria gonorrhoeae
(ii) Syphilis	Treponema pallidum
(iii) Chlamydiasis	Chlamydia trachomatis

• Viral STDs	pathogen
(i) Genital Herps	HSV (herpes simplex virus)
(ii) Hepatitis-B	Hepatitis-B virus
(iii) Genital Warts	HPV (human papillomavirus)
(iv) AIDS	HIV ~~Hpt~~ (human immune - deficiency virus)

• protozoal STDs	pathogen
Trichomoniasis	Trichomonas vaginalis

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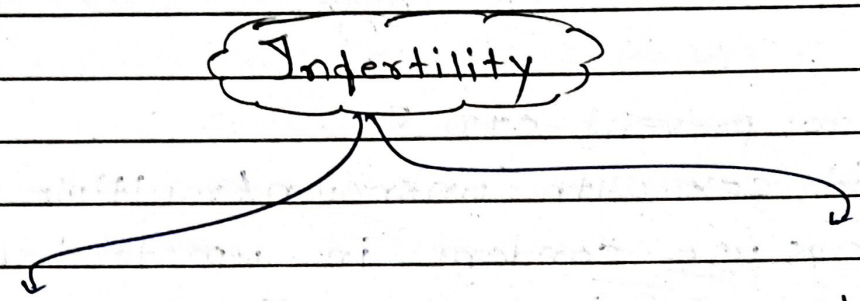
* Infertility

- When a couple is not able to produce children even after unprotected sexual cohabitition of 1 or 2 years



primary infertility
→ no reported pregnancy in past

secondary infertility
→ pregnancy occured in past, problem in concieving further

- Reason of infertility ÷ Congenital, physical, drugs, immunological, psychological etc.

- In case of infertility, couple visits doctor to and get treatment. There is a possibility that even after treatment, couple is not able to produce children. Then they go for ART (assisted reproductive technology)

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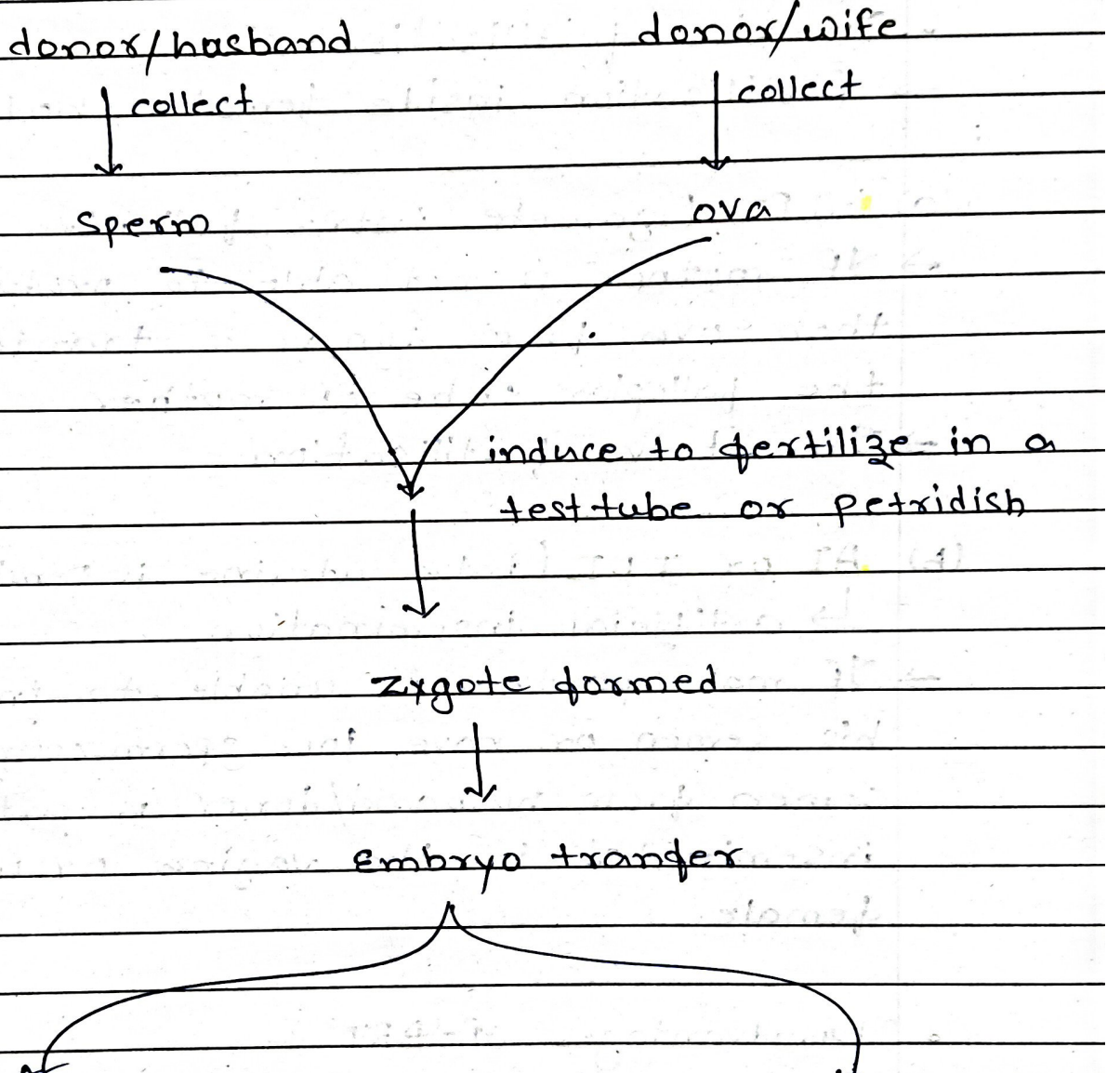
- In-vitro fertilisation
→ fertilisation outside body (in lab).

(a) Test tube ~~bad~~ baby program



(b) ICSI

→ intra cytoplasmic sperm injection
→ In this sperm is directly injected into ovum
→ In-vitro fertilisation.

• In-vivo fertilisation
→ fertilisation inside female body

(a) GIFT (gamete intra fallopian tranfer)
→ If mother is not able to produce ova then ova from donar is trandered in the fallopian tube of mother
→ In-vivo fertilisation

(b) AI or IUI (intra uterine insemination)
↳ artificial insemination
→ If male partner is unable to inseminate his semen or have low sperm count, then the semen from husband/donor is artificially inseminated in the vagina or uterus of female.

• Disadvantages of 'ART' :-
→ very expensive
→ available in few centres only
→ require precise handling and expertise

Note:- Legal adoption is the best way for the couple who want to become parent (but due to infertility, they are not able)

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- Hysterectomy : Surgical removal of uterus.